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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,745	02/07/2002	Philip M. Johnson	HST1 0101 PUSP	3002

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EXAMINER

ANTHONY, JOSEPH DAVID

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/072,745

Applicant(s)

JOHNSON ET AL.

Examiner

Joseph D. Anthony

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 16-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

- I. Claims 1-15 and 21, drawn to liquid an etching composition, classified in class 252, subclass 79.2.
- II. Claims 16-20, drawn to a method of etching aluminum or its alloys, classified in class 134, subclass 3.

The inventions are distinct, each from the other because of the following reasons:

1. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used as a descaling solution for water intake systems.
2. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Michael S. Brodbine on 3/3/03 a provisional election was made with traverse to prosecute the invention of Group II, claims 16-20. Affirmation of this election must be made by applicant in replying to this

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Office action. Claims 1-15 and 21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 16-17 and 19-20 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of etching and desmutting aluminum or its alloys comprising exposing said aluminum or its alloys to an aqueous solution comprising sulfuric acid, nitric acid, phosphoric acid and a molybdate and/or condensed molybdate ions, does not reasonably provide enablement for aqueous solutions that do not contain a molybdate and/or condensed molybdate ions. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. It needs to be pointed out that applicant's specification says

that one of the required components used in the aqueous etching/desmutting solution is a stabilized oxidant. The specification then goes on to list molybdate and/or condensed molybdate ions as examples of such stabilized oxidants. The use of the phrase "stabilized oxidant" to describe molybdate and/or condensed molybdate ions is incorrect since a molybdate and/or condensed molybdate ions are not oxidants themselves but rather catalyst for other real oxidants such as peroxides or their salts. Since applicant's specification is using "stabilized oxidant" to mean something other than real oxidants, there is no way for one having ordinary skill in the art to know what other species would read on applicant's so called "stabilized oxidant" component. Thus the requirement for claims to be limited to where the aqueous etching/desmutting solution contains molybdate and/or condensed molybdate ions.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 is indefinite because the metes and bounds of the component "stabilized oxidant" is not known. Claim 16 should also be rewritten into independent form.

Claim 16 is further deemed to be indefinite in regards to the phrase "exposing articles", since just exposing the articles to the composition neither conveys nor

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requires that etching and desmutting of aluminum or its alloys in a one step process is actually occurring during the exposing step.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 16, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schemenaur et al. U.S. Patent Number 6,444,140.

Schemenaur et al teaches micro-etch solutions for producing metal surface topography. The etching solutions comprise in part : nitric acid, sulfuric acid, phosphoric acid, and a water-soluble molybdenum source as an activator for an oxidant. The metal surface to be etched can be aluminum or its alloys. See column 2, line 63 to column 3, line 11, column 3, lines 26-33 and column 3, line 57 to column 4, line 10.

Schemenaur et al differs from applicant's claimed invention only in that there is no direct teaching (i.e. by way of an example) to where aluminum or its alloys is actually etched with the disclosed etching solution.

It would have been obvious to one having ordinary skill in the art to follow the direct suggestion of the reference to etching metal surfaces such as

aluminum or its alloys with the disclosed etching solution as motivation to actual etch such surfaces. Note: Applicant's claimed desmutting function is deemed to inherently occur with Schemenaur et al's etching solution.

12. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schemenaur et al. U.S. Patent Number 6,444,140 in view of Patel et al. U.S. Patent Number 5,160,600.

Schemenaur et al. Has been described above and differ from applicant's claimed invention in that there is no direct disclosure to the further addition of wetting agents, such as perfluoroalkyl sulfonates and complexing agents/grain modifier, such as aluminum sulfate to the taught etching solutions.

Patel et al directly teaches chromic acid free etching of polymers using an aqueous etching solution comprising in part: sulfuric acid, nitric acid, phosphoric acid, a noble metal ion, oxidant, a surfactant such a perfluoroalkyl sulfonate and aluminum sulfate, see column 5, lines 20-45, column 6, lines 4-32, examples, such as examples 5-6 and Table 4.

It would have been obvious to one having ordinary skill in the art to use the direct teaching of Patel et al as motivation to add a perfluoroalkyl sulfonate surfactant and aluminum sulfate to the etching/desmutting solutions of the primary reference for the benefits such components add to such etching/desmutting solutions.

13. Claims 16, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Serafin et al. U.S. Patent Number 5,985,046 in view of Carlson et al. U.S. Patent Number 5,393,447 or Tadros U.S. Patent Number 4,883,541 or Dutkewych et al. U.S. Patent Number 4,144,119 or Schemenaur et al. U.S. Patent Number 6,444,140.

Serafin et al teaches a process for making clear-coated aluminum alloy lighting sheet. Said process requires the etching of an aluminum alloy surface with an aqueous etching solution comprising in part: sulfuric acid, nitric acid, phosphoric acid and a copper or aluminum salt, see page 4, lines 54-65 and page 5, lines 37-51. Serafin et al differs from applicant's claimed invention in that there is no disclosure to the further addition of a "stabilized oxidant?", such as a molybdate source.

The secondary references to Carlson et al., Tadros, Dutkewych et al, and Schemenaur et al. all individually teach acidic aqueous etching/desmutting solutions that comprise a soluble molybdate source in combination with an oxidizer as an effective synergistic additive to acidic solution that are used to etch aluminum or its alloys. Note: Applicant's claimed desmutting function is deemed to inherently occur with Serafin et al's etching solution.

It would thus have been obvious to use the disclosure of anyone of the secondary references as motivation to actually add a molybdate source and an oxidant to the aqueous acidic etching/desmutting solution taught by Serafin et al for the benefits such an addition are known to add to such aqueous etching/desmutting solutions.

14. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Serafin et al. U.S. Patent Number 5,985,046 in view of Carlson et al. U.S. Patent Number 5,393,447 or Tadros U.S. Patent Number 4,883,541 or Dutkewych et al. U.S. Patent Number 4,144,119; all said combinations further in view of Patel et al. U.S. Patent Number 5,160,600.

This rejection builds on the rejection made above. Serafin et al further differs from applicant's claimed invention in that there is no direct disclosure to the further addition of wetting agents, such as perfluoroalkyl sulfonates and complexing agents/grain modifier, such as aluminum sulfate to the taught etching solutions.

Patel et al directly teaches chromic acid free etching of polymers using an aqueous etching solution comprising in part: sulfuric acid, nitric acid, phosphoric acid, a noble metal ion, oxidant, a surfactant such a perfluoroalkyl sulfonate and aluminum sulfate, see column 5, lines 20-45, column 6, lines 4-32, examples, such as examples 5-6 and Table 4.

It would have been obvious to one having ordinary skill in the art to use the direct teaching of Patel et al as motivation to add a perfluoroalkyl sulfonate surfactant and aluminum sulfate to the desmutting/etching solutions of the primary reference for the benefits such components add to such desmutting/etching solutions.

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15. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson et al. U.S. Patent Number 5,393,447 in view of Patel et al. U.S. Patent Number 5,160,600 or Carson et al. U.S. Patent Number 5,227,016 or Schemenaur et al. U.S. Patent Number 6,444,140 or Serafin et al. U.S. Patent Number 5,985,046 or Muller et al. U.S. Patent Number 5,271,804 or Aoki et al. U.S. Patent Number 5,336,425.

Carlson et al '447 teaches chromium and ferricyanide free aqueous dioxidizer/desmutter solutions for aluminum or its alloys. The aqueous solutions comprise in part: nitric acid, sulfuric acid, a flocculent (i.e. a grain modifier), such as ferric sulfate, persulphate, molybdate, such as ammonium molybdate, ammonium fluoride, and a surfactant. Carlson et al '447 differs from applicant's claimed invention in the following ways: 1) there is no direct disclosure to the further addition of phosphoric acid to the aqueous deoxidizer/desmutter solutions, and 2) there is no disclosure to the further addition of perfluoroalkyl sulfonates as a wetting agent, and the further addition of aluminum sulfate as the complexing agent/grain modifier to the taught etching solutions.

All said secondary references individually directly teach that it is well known in the art to make aqueous acidic etching/desmutting solutions that comprises phosphoric acid as one of the acid component with other acids such as nitric acid and sulfuric acid and combinations thereof. It would have been obvious to one having ordinary skill in the art to use the teachings of the individual secondary references as motivation to actually incorporate phosphoric acid into the aqueous acidic desmutting compositions as taught by Carlson et al

'447 for the benefits phosphoric acid adds to such compositions. Note:

Applicant's claimed etching function is deemed to inherently occur with Carlson et al's '447 desmutting solution.

It would also have been obvious to one having ordinary skill in the art to use the direct teaching of Patel et al as motivation to add a perfluoroalkyl sulfonate surfactant and aluminum sulfate to the desmutting/etching solutions of the primary reference for the benefits such components add to such desmutting/etching solutions.

16. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. U.S. Patent Number 5,336,425 in view of Carlson et al. U.S. Patent Number 5,393,447 or Tadros U.S. Patent Number 4,883,541 or Dutkewych et al. U.S. Patent Number 4,144,119 or Schemenaur et al. U.S. Patent Number 6,444,140 or Patel et al. U.S. Patent Number 5,160,600.

Aoki et al teaches acidic aluminum cleaner compositions that comprise in part: nitric acid, phosphoric acid, sulfuric acid, polyvalent metal ions, such as iron sulfate, an oxidant, such as hydrogen peroxide, surfactant and optional chelating agent, see abstract, column 2, column 3, lines 50-52 and the examples. Aoki et al differs from applicant's claimed invention in the following ways: 1) there is no disclosure to the further addition of a "stabilized oxidant?", such as a molybdate source and 2) there is no disclosure to the further addition of perfluoroalkyl

sulfonates as a wetting agent, and the further addition of aluminum sulfate as the complexing agent/grain modifier to the taught etching solutions.

The secondary references to Carlson et al., Tadros, Dutkewych et al, Schemenaur et al. and Patel et al. all individually teach acidic aqueous etching/desmutting solutions that comprise a soluble molybdate source in combination with an oxidizer as an effective synergistic additive to said acidic desmutting solutions.

It would thus have been obvious to use the disclosure of anyone of the secondary references as motivation to actually add a molybdate source and an oxidant to the aqueous acidic desmutting/etching solution taught by Aoki et al for the benefits such an addition are known to add to such aqueous desmutting/etching solutions. Note: Applicant's claimed etching function is deemed to inherently occur with Aoki et al's desmutting solution.

It would also have been obvious to one having ordinary skill in the art to use the direct teaching of Patel et al as motivation to add a perfluoroalkyl sulfonate surfactant and aluminum sulfate to the desmutting/etching solutions of the primary reference for the benefits such components add to such desmutting/etching solutions.

Prior-Art Cited But Not Applied

17. Any prior-art reference which is cited on FORM PTO-892 but not applied, is cited only to show the general state of the prior-art at the time of applicant's invention.

Examiner Information

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Joseph D. Anthony whose telephone number is (703) 308-0446. This examiner can normally be reached on Monday through Thursday from 7:35 a.m. to 6:00 p.m. in the eastern time zone. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The group FAX machine number is (703) 872-9306. All other papers received by FAX will be treated as Official communications and cannot be immediately handled by the Examiner. Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0651. The receptionist is located on the 8th floor of Crystal Plaza 3 (e.g. CP-3) and will be the welcome point for all visitors to the building.



Joseph D. Anthony
Primary Patent Examiner
Art Unit 1714

8/20/03